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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DANIELS, MATTHEW J

ART UNIT

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1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/507,403	<b>Applicant(s)</b> HORSTING ET AL.	
	<b>Examiner</b> MATTHEW J. DANIELS	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 29-40 and 52-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-40 and 52-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                            | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Drawings*

1. The objection is withdrawn.

### *Claim Rejections - 35 USC § 112*

2. Rejections set forth previously under this section are withdrawn.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 29-37, 39, and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Trudeau (US 5,209,804) in view of Nishimura (US 4,622,254). **As to Claim 29**, Trudeau teaches a cutting process in which a prepreg material is drawn off in one piece from a roll (Fig. 1, item 28) and cut to size according to a given contour (Fig. 1, items 23 and 25). It is submitted that the fiber orientation in the pieces cut by Trudeau would obviously be matched to the loading forces to be placed on the component.

Trudeau is silent to the particular prepreg claimed in Claim 29. However, Nishimura teaches a non-woven fabric reinforcement of a resin-impregnated mat from at least one layer of intersecting endless fibers which would obviously resemble a textile when its various layers are overlapped as depicted in Fig. 7.

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It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Nishimura into that of Trudeau because (a) Trudeau suggests prepreg materials and Nishimura provides a prepreg which one would have recognized as being of the type suggested by Trudeau, or (b) the combination merely provides a known material (Nishimura) in a known process (Trudeau) in which the material would have been desirable.

**As to Claims 30-37, 39, and 40**, Nishimura teaches a non-woven material built from layers having different alignment Fig. 7, items 1a-3), wherein at least one layer is unidirectionally aligned (Fig. 7, item 3), wherein the multitude of non-woven materials would obviously provide alignment in the effective direction of any force or wherein one would have found it obvious to reinforce in the stress direction (Fig. 7), wherein the mat is impregnated with resin (7:40-46) thereby joining the fibers to one another at their intersections, wherein an angle of intersection between the fiber includes 45 degrees which is interpreted to be a conventional textile configuration (3:25-31, 2:35-45), wherein the mat is built from several layers of non-woven material and wherein each interface exhibits a textile structure (Fig. 7, items 3/5 and 6/4), wherein the individual angles can be different (so long as they fulfill the 25-65 degree condition at 2:35-45), wherein the fibers are carbon (6:20-28), and wherein the fibers would obviously be prepared for flow (prepregs would obviously be prepared for pressing since the resin is not fully cured, 4:26).

4. **Claim 38** is rejected under 35 U.S.C. 103(a) as being unpatentable over Trudeau (US 5,209,804) in view of Nishimura (US 4,622,254), and further in view of Woelfel (US 4,294,639).

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Trudeau and Nishimura teach the subject matter of Claim 29 above under 35 USC 103(a). **As to Claim 38**, Trudeau and Nishimura appear to be silent to the claimed random fibers. However, prepregs having unidirectional fibers and chopped fibers in combination are conventional. See Woelfel, Figs. 1 and 16-18. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Woelfel into the modified process of Trudeau because (a) Trudeau suggests prepregs without limitation to any particular configuration, and Woelfel provides a prepreg, or (b) the combination merely provides a known prepreg configuration into a known process which utilizes prepregs, or (c) one would have been motivated to substitute the particular chopped fibers into the modified method of Trudeau in order to provide a material having more isotropic properties (strength in all directions).

5. **Claims 52-59** are rejected under 35 U.S.C. 103(a) as being unpatentable over Trudeau (US 5,209,804) in view of Nishimura (US 4,622,254), and further in view of Livingston (US 3,881,978). **As to Claims 52 and 53**, Nishimura suggests heating under pressure (1:20-21) and the particular non-woven reinforcement configuration claimed (see the rejection of Claim 29), and Trudeau teaches a resin-impregnated mat produced by drawing off from a roll as a web and cutting a blank having a crude contour (see the rejection of Claim 29), but the references appear to be silent to the blanks being placed into a press to reach a wall thickness, peeling off the backing and covering film, and pressing in a known manner. It is submitted, however, that Livingston teaches providing a backing sheet and a covering sheet (items 4 and 8), which are removed before pressing (Example 1), and that these aspects are conventional for use with prepregs. Multiple layers are stacked and pressed between plates in a known manner (5:48-60).

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Note that these teachings are somewhat redundant over those already found in the Trudeau reference (column 1). It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Livingston into that of the modified Trudeau process because Trudeau suggests a laminate pressing process (which Livingston provides), and one would have incorporated the improvement of Livingston (the backing and covering sheets) into the Trudeau process in order to avoid spreading resin over the cutting and handling apparatus.

Regarding Claims 54-59, Trudeau teaches substantially the claimed cutting device operated in the substantially the same manner. **As to Claims 54 and 55**, Trudeau teaches a numerically controlled cutter which would operate automatically by computer control (150). **As to Claims 56 and 57**, Trudeau teaches a pickup device (column 4, especially 4:29-59), and one would have found it obvious to use the Trudeau device to place directly into the mold cavity also suggested by Trudeau (1:54-65). **As to Claims 58 and 59**, it is submitted that because all of the operations of Trudeau are numerically controlled (column 4), that there would obviously be a computer code stored in the computer to control all of the claimed operations. In the alternative, it would have been obvious to provide a code which controls all of the claimed operations.

### ***Response to Arguments***

6. Applicant's arguments filed 26 November 2008 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

a) Nishimura discloses mats that are not suitable for flow-pressing since the seams would impede the deformation such that the mat would rip open.

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b) Cutting to size of the composite webs of Nishimura would not be possible due to the sewing of the webs. The mats of Nishimura remain non-deformed in the further processing (See Figs. 10A-10I), and the structural components do not originate from mats pressed into form, but from a joining of several mats while they are bent into the form of the structural component.

c) Trudeau does not provide a flow-press method. Trudeau fails to provide fibers matched to the loading.

d) According to Woelfel, the contour of the structural component is not cut from a web precisely conforming to the contour. The webs generated are cut into pieces and must, as in conventional methods, be deposited by hand into different orientations. The orientation of the fibers at a specific crossing angle, as is evidence based on the enlarged detail, takes place in view of the fiber fraction in the rim flange.

7. The arguments appear to be on the following grounds:

a) If “flow-pressing” is different from the claimed process, then it is submitted that the argument is not commensurate with the scope of the claim. If “flow-pressing” merely refers to the claimed process, then it is unclear why the Nishimura material would impede deformation or rip open, as asserted by Applicants' arguments. While Nishimura does teach stitch yarns, 7, it is unclear why their presence would be contrary to any aspect of the Trudeau process. Indeed, it appears that one of the purposes of the Trudeau process is to provide cut plies that will minimize the amount of deformation necessary to conform to a particular mold configuration, suggesting that the use of Nishimura's stitching would not lead to problems. Such a ply (that of Nishimura) would readily conform to the desired configuration of the mold with a minimum amount of

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bending and flexing. Additionally, arguments cannot take the place of actual proof, and no basis in the references has been offered for this assertion of inoperability.

b) It must be noted that the entire mat of Nishimura is comprised of fibers. It is unclear why stitching would render the web impossible to cut when the stitching fibers are not likely to be significantly different in material or properties from those comprising the reinforcing fibers. While Applicants cite to Figs. 10A-10I of Nishimura for the proposition that the mats “must” remain non-deformed in further processing, it is submitted that the figures by themselves do not support that proposition. The figures show various contours, and the arguments do not point to any portion of the text which supports Applicants' position.

c) Note that the claims do not recite a “flow-press” method, and to the extent that the claim limitations are met by the applied references, they constitute the flow-press method sought. Nishimura teaches fibers oriented in multiple different directions, at least some of which would be oriented in a direction matched to the loading.

d) Applicants' arguments appear to point to a process relied upon for teachings about the obviousness of the interchangeability of various types of fibers (Woelfel) to suggest that some aspect of the placement of those fibers in the mold is unobvious. The Examiner submits that this argument does not address the teachings relied upon or particularly rebut the rationale for the combination, and that the rejection remains valid.



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. DANIELS whose telephone number is (571)272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew J. Daniels/  
Primary Examiner, Art Unit 1791  
2/28/09